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ABSTRACT

It is possible to perform a structural analysis of similar conversations and define units within particular types of conversations to discover the regularities underlying the considerable variation in natural communication. Convergent communication consisting of an exchange of information in pursuit of a mutually agreed upon goal can be seen as a highly structured type of behavior in which both participants perform according to complex sets of shared rules. Various parts of conversations are defined and a pattern of differences is found between different age groups, indicating that conversation organization is a feature that is acquired along with language development. References are included. (VM)

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A STRUCTURAL APPROACH TO THE STUDY OF CONVERGENT COMMUNICATION

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Few studies of the communication process have examined the structural properties of the communications themselves.[1] Yet observation of natural communication situations with similar objectives suggests that the participants often behave regularly and predictably in initiating, carrying out and concluding their conversations. It seems reasonable to assume that communications, like less extensive stretches of linguistic material such as clauses, may exhibit internal structure, that is, may be composed of hierarchical units whose arrangement can be specified. If such structural properties can be reliably identified, then these could serve as dependent measures of communication performance in experimental or observational studies of communication behavior.

An initial attempt to discover the regularities underlying the considerable variation in natural communication should be limited to relatively homogeneous speech situations. Explaining one's part in an automobile accident to a judge in court and recounting the same incident to a sympathetic friend at a social gathering require very different communication behavior, although the same 'content' is treated. Also, the communication channel (face to face or via telephone) and the field of discourse are potential sources of variation in message form.

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Definition of the communication type

The present approach to the analysis of communication is limited to dyadic communications which exhibit the following characteristics:

1) There is an explicit goal which is pursued by

2) an exchange of information provided by

3) overt cooperation on the part of the participants.

The dyad has the information necessary to achieve its objective (i.e., solution of a problem or progress toward a solution). However, the information is distributed between the participants in an unequal and complementary manner so that (verbal) interaction is necessary to reach the mutually acknowledged goal. This convergence of information into a task solution is reflected in the designation of this type of conversation: convergent communication. It is common to this type that participant function is distinguished as that of Knower and Doer. The Knower is aware of the form of the final solution. The Doer is aware of the problems involved in reaching that solution and has, furthermore, the responsibility of executing it. The Doer, then, shapes the Knower's presentation of information by his continuous participation.[2]

These characteristics of convergent communication are found in a variety of natural conversation situations.[3] We postulate that a frequent and repeated social activity (here, problem-solving) will exhibit a conventionalized structure and will function as a context which influences particular and appropriate interpretation of messages occurring in that context.

Procedures

Three oral communication tasks were devised to elicit instances of convergent communication as defined above. The tasks differed considerably

in content and logical requirements, but all satisfied the definition of convergent communication. Briefly, Task I required one member of the dyad (A) to choose from an array of seven figures a figure identical to that held by the other member of the dyad (B). The figures differed on four relevant dimensions. Task II required A to complete the building of a partial model of a molecule so that the completed model would be identical to that held by B. Task III required A to trace a route on a map identical to the route shown on B's map. Each task contained two or more subtasks. Across the subtasks participants alternated as Knower and Doer. Members of the dyad could talk freely but were separated by a screen. There was no time limit on the tasks, and no feedback was provided on the correctness of the solutions.

The tasks were administered to 48 dyads of fifth-grade public school children and to 24 dyads of pre-service teachers in two teachers' colleges. All dyads were internally homogeneous with respect to sex, race, academic age and school or college membership. An administrator of the same sex as the dyad read the standardized instructions, handed out and collected the task materials and recorded the final solutions.

The sessions were tape recorded, providing on the average one hour of conversation per dyad. The tapes were transcribed under the supervision of a linguist and transcribers were checked for agreement on identification of questions, interruptions, etc.

Performance on the tasks was assessed for accuracy.[4] For this assessment and for the structural analysis the behavior of the dyad, rather than that of the individual, was the primary object of investigation.

The following description of the structural features of convergent communication is based on the transcribed protocols of adult speech.

The organization of a convergent communication

The basic unit of behavior for the structural analysis of the communication is the exchange. The focus of interest is thus the interaction of the participants. The exchange is composed of two sequential events (two utterances, one from each participant) or parts of events which stand in structural relationship to each other. An event may be voluntarily terminated or interrupted. The event may be interpreted only in its relevant context, the exchange. Thus in the following example, events 3 and 4 form exchange 3-4, events 4 and the first part of 5 form exchange 4-5. Event 4 stands in relationship (as appropriate response to an interrogation) to event 3, thus forming exchange 3-4. But event 4 also stands in relationship (as statement which receives an appropriate response) with event 5, thus forming exchange 4-5. The function and the 'meaning' of event 4 depends upon its relevant exchange context.

Examples of the units, event and exchange:[5]

3) what do I do when I get to the intersection?#

4) you take a left#

5) okay -- a left# then I should be going north#

6) yeah# so you go north until you hit the beltway#

7) right#

Exchanges occur in their context, which is a higher unit of organization which we will call the chunk. A chunk is composed of a series of exchanges and reflects a focus on a single major purpose, or theme. Thus, the chunk is a unit of content. However, the boundaries of chunks are commonly marked

by verbal signals. Chunk initial markers are: okay, now then, all right, now. The termination of a chunk is marked by signals of evaluation, e.g., A - Right? B - Right. A - Okay (where A and B indicate the two participants, but do not identify their function as Knower or Doer). Another salient characteristic of chunk termination is low density of new content.

The chunk also displays properties of internal cohesion. Features of repetition, of anaphoric substitution, of paraphrase and of parallel grammatical dependency link events and exchanges within chunks. In many chunks groupings of exchanges can be observed. One such grouping is called the exchange group. It is composed of an interrupted event, the interrupting event and an event which completes the interrupted event (see events 7 and 8 and 9 in the following example). The exchange group then functions as a single event in forming an exchange with the next event, i.e., (7-8-9)-10.

Example of chunk with exchange group (// marks chunk boundaries):

//

7) and then -- well after you pass the flag just a little bit there's a/

8) like a small/

9) a vertical line#

10) right#

11) go up that -- unh -- little line#

12) un huh#

13) okay?#

14) yeah# //

15) then -- there's a little block with a building . . .

Another, more extensive, grouping of exchanges within the chunk provides further evidence of the participants' mutual recognition of the chunk as a unit. The embedded exchange sequence is a series of exchanges with a single

function (which may be to clarify or to extend some component of the chunk theme). An exchange is formed between the event preceding the embedded sequence and the event following it, the embedded sequence being treated as relevant, but parenthetical, material. In the following example exchanges 22-23, 23-24, 24-25 form an embedded sequence (with a clarifying function). However, event 21 and event 26 also form an exchange with a structural relationship (of interactional statement which directly facilitates another statement).

Example of chunk with <u>embedded exchange sequence</u> (22-25):

//
20) okay where you come to that line again#

21) yeah#

22) that line that's intersecting#

23) right above the engine?#

24) yeah#

25) un huh#

26) go up until you hit the next intersection line#

27) okay# //

28) now -- go left#

Chunks occur in the <u>stages</u> of the communication. Stages are the highest level unit postulated in the structure of a convergent communication. These are the orientation stage, the task conduct stage and the closing stage, which serve the respective functions of setting forth the task goal and procedures for achieving it, of carrying out the goal, and of reviewing the results and/or agreeing on the termination of the goal-focused interaction.[6] The bulk of the material in our data represents the task conduct stage, since in an experimental situation, instructions presented by the administrator may subsume in part the functions of the orientation stage and may also affect

the closing stage, when the final solution must be communicated to the administrator.

The task conduct stage is of particular intrinsic interest, however. Since the number of chunks and the ordering of thematic material within and across chunks may differ from dyad to dyad, it is reasonable to hypothesize that the chunks of the task conduct stage represent the dyad's componential analysis of the task or problem. In other words, the chunks may represent the breakdown of the task into steps or parts, a breakdown made by the dyad as it pursues the agreed-upon objective of the communication.

In summary, a complete convergent communication can be viewed as organized of hierarchically ranked units. The highest level unit is the stage. Three functional stages are identified: orientation, task conduct and closing. Stages are composed of one or more chunks, a unit of content the boundaries of which are usually formally marked. Chunks are composed of exchanges. An exchange is composed of two sequential events (two utterances one from either participant) or parts of events which stand in a structural relationship. Exchanges may form exchange groups or embedded exchange sequences, which are optional groupings within the chunk.

Classification of events and exchanges

The exchange of information in pursuit of a mutually agreed-upon goal is carried out by overt verbal cooperation between the participants of a convergent communication. Thus, information must be sought and presented. Once presented, the information tends to be explicitly evaluated and/or the reception of the information overtly acknowledged. Events are classified as exhibiting the following types of behaviors: (1) Search, self or

other-generated seeking behavior, (2) Presentation, self or other-generated provision of information, and (3) Reception and/or Evaluation, responsive behavior consisting of assessment or acknowledgment of another message. (Events which cannot be so classified are rare and consist primarily of unintelligible or interrupted events or exclamations, e.g., "Whoops!") The function of the speaker (Knower or Doer) is taken into account in classifying an event, as well as the position of the event in its relevant context, the exchange.

The content of events in convergent communication can be classified by the type of relationship to the purpose or goal of the communication. Event content is of two types: (1) it is directly relevant to the unique objectives of the task, e.g., in Task I reference to dimensions and attributes of the figure; in Task III reference to directions, distances and landmarks on the map; or (2) it is peripheral, not directly relevant, to the unique objectives of the task, e.g., it refers to participant relationships ("Wait a minute. You better tell me that again") or to an encoding or recoding process ("What do you mean by 'curvey?'"). Included in task peripheral content are continuatives ("Yeah"), when these are not answers, and other types of concurrent feedback (A - Okay? B - Okay).

The exchange is analyzed as being composed of two sequential events in relationship. Nine categories of structural relationship account for the majority of exchange types. (When no structural relationship obtains between two sequential events, this absence, under certain conditions, signals chunk termination in adult communications.) A detailed description of these relationships has been presented elsewhere.[7] Briefly, question types are distinguished as content, disjunctive or polar questions. Responses to the questions

are said to satisfy the question, or to be appropriate to the question though not satisfying the question. For example, a disjunctive question which has the form X? or Y? is satisfied by a response that selects either X or Y. However a response which does not select either X or Y but whose form or content is predictable in relationship to the question is only appropriate. If a disjunctive question is asked and receives neither type of response, no structural relationship obtains.

Example of structural relationship created by:

1. a disjunctive question satisfied by appropriate response,

   A. Should I go right or left? B. Go left.

2. a disjunctive question receiving an appropriate response,

   A. Should I go right or left? B. Well, just go north.

   or B. Do you mean to your right or mine?

3. a disjunctive question without appropriate response = no structural relationship,

   A. Should I go right or left? B. I'll go back to the last intersection and start again from there.

Non-interrogative events, i.e., predications, statements, or directives, are classified as receiving either appropriate non-interrogative responses or as receiving appropriate interrogative responses or neither. If a following event is not an appropriate response of either type, then no structural relationship obtains.

Example of structural relationship created by:

1. a directive receiving appropriate non-interrogative response,

   A. Go left. B. Okay, I turned left.

2. a directive receiving appropriate interrogative response,

   A. Go left. B. Left? You mean north?

3. a directive without appropriate response = no structural relationship,

   A. Go left. B. I see some buildings ahead.

The basis of the classification systems of event (by behavior and content) and of exchange (by structural relationship) rests on the explicit, purposive style of interaction characteristic of convergent communication and would not be expected to exhaustively or uniquely characterize the form of some different communication type. The explicit, purposive style of interaction might be described by conduct guide rules stated in the form of mutually shared expectations. For example, in relation to questions, three rules which seem to influence speakers' behavior might be suggested:

1. A question will be interpreted as a message to which an answer is expected, i.e., the questioner will not answer his own question, as in the case of a rhetorical question.

2. A question should be <u>successfully</u> asked, i.e., if not heard it should be repeated; if heard and not appropriately answered it should be reformulated.

3. A question should be answered <u>fully and precisely</u>. A question (asked according to rule 1 above) is taken in good faith, and the answer should be literally addressed to the question as formulated, if possible.

These tentatively formulated rules are grossly underspecified but, if they are approximately correct for carrying out a convergent communication, they are not universally valid, that is, they do not hold for all types of two-person communication. In fact, if rule 3 is applied in a casual social conversation (associational mode, see Fn. 1), the interlocutor will interpret the message which realizes that rule as a violation of the norms of the casual conversation mode.[8]

Interrater agreement in using the classification systems

The behavioral, structural relationship and content systems as well as the markers of chunk boundaries and the properties of chunk internal cohesion were briefly described in a coding manual. Raters, who had studied the manual, coded samples from the transcripts of each task. Average agreement across three raters (across tasks and dyads) was .93. Average agreement between pairs of raters across tasks and dyads was .91. Examination of the coding of the three different systems and marking of chunk boundaries, by tasks and by dyads, revealed no special biases. Two raters then coded the remaining transcripts independently and checked them, so that each coded transcript represents the consensus coding of two raters. The coded transcripts were then used in the examination of child and adult communication behavior.

Some results

We have described convergent communication as a highly structured type of behavior, suggesting that both participants in the dyad perform according to complex sets of shared rules. One type of rule system would, for example,

specify the appropriate use of formal and semantic features to mark the shift of attention from one step (or theme) in the problem-solving interaction to another.

Such rules would be acquired by young speakers in a speech community. We might expect that our fifth-grade subjects have begun to develop some competence in the use of this type of communication and thus that their performance may resemble, though not be identical to, that of adults.

Thus far, two of the structural features postulated for this type of communication have been examined. First, the organization of the communication into stages (relating to the overall progress of the interaction) and second, one feature of the organization of the smaller thematic units (chunks) will be discussed.

Orientation and Closing Stages. Although in the experimental situation the orientation and closing stages tend to be short (compared to these stages in spontaneously initiated conversations), reflexes of these stages are present in the experimentally elicited conversations. The orientation stage is considered present if one or more of the opening events refer to task management (e.g., "I'll ask the questions this time") and/or to a task constant. The task constant may be the goal (e.g., A - Okay we're going to go from the school to the ball park. B - The school on the lower left-hand corner? A - Yeah) or the task manipulanda, or both, (e.g., A - Okay, now my figure looks like a poodle without a head. B - Right, I'm going to give you the head).

The closing stage is considered present if there is reference to task conclusion after the operations have been completed; after attributes have been identified (Task I); after the model has been built (Task II); or

after the last point on the map has been reached (Task III). An example of the closing stage from Task III is: A - So now you're at the ball park. B - Yeah, so that's it? A - That's it.

The percentages of adult and child dyads for whom the orientation and closing stages were present are given in Table 1.

(Insert Table 1 here)

The orientation and closing stages are present in a greater percentage of adult dyads than in child dyads in each of the three tasks. The fifth-grade child dyads have, however, a fairly high representation of these stages in their speech. The difference between Task III and the other two tasks may be in part a result of increased familiarity with the speech situation, and in part a result of intrinsic task differences. Since all tasks were presented in the same order, this question cannot be resolved.

Termination of Chunks. Chunks usually end with low density of new content and high density of signals of reception and evaluation. Exchange relationships do not carry over across chunks. These characteristics form a preferred pattern of chunk ending for adult dyads, a resolution of the chunk theme (see the example on page 5, exchange 12-13, 13-14). This pattern, the components of which were categorized by the coding system, was designated "resolution." The percentage of chunks ending in "resolution" was calculated for child and adult dyads in each of the three tasks. The results are presented in Table 2.

(Insert Table 2 here)

In each task adult dyads terminate chunks with resolution significantly more often than do the child dyads. Again, differences are great across tasks, but in all three tasks this pattern is significantly more frequent

in adults' performance than in the children's. As in the data on the representation of the orientation and closing stages, the children use this pattern to some extent, but less consistently.

Summary and conclusion

A frequently occurring type of dyadic communication was defined and its structure related to its purpose and interactional features. The structure of the type was described in terms of hierarchical units. The properties of the higher level units, which organize the content of the communication, were identified, and the lower level units were classified as to behavioral, content and structural interaction type. The analysis was based primarily on transcripts of adult and child dyads performing three tasks which conform to the defining characteristics of the communication type. Evidence of the communicability of the classification systems was presented in estimates of interrater agreement.

Two features of the organization of the communication type were examined: (1) differentiation of the communications into orientation and closing stages and (2) presence of a pattern of chunk termination, i.e., "resolution." Both differentiation into stages and chunk resolution represent means by which the participants organize the conversational interaction and mutually signal this organization. The performance of child and adult dyads was compared on two measures of these features. A greater percentage of adult dyads than child dyads showed differentiation of the communications into stages. Similarly a greater percentage of chunks in adult speech showed the pattern of resolution than did the chunks in children's speech. The structural features were, however, represented in the children's speech

to some extent. These results were interpreted to mean that whereas the adult dyads had acquired and consistently used these features of organization, the fifth-grade children had not consistently incorporated these features into their communications. The results reported here and those of other comparisons recently completed suggest that this approach to the study of communication could be extended to sample other age-grade levels in order to describe the development of competence in goal-oriented dyadic speech.[9]

Two additional steps are planned to develop and substantiate the approach outlined in this paper. First, we plan to gather more data from spontaneously initiated conversations in natural settings which conform to the definition of convergent communication. It is possible that the expanded corpus may necessitate elaboration of the present classification systems. Second, in order to support the contention that convergent communication is a uniquely structured type of conversational interaction, contrastive evidence on other types of conversation is required. Preliminary inspection of speech events designated as interviews and those called interrogations or examinations lead us to suspect that they share a number of characteristics in common, and that they may differ on important structural dimensions from convergent communication.

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FOOTNOTES

[1]Several exceptions to this statement deserve comment. Investigations by McGuire and Lorch (1968) show that different conversational modes may emerge from different participant relationships. The purpose of conversation as well as the influence of setting contribute to the definition of these relationships.

A speech routine (a member of a class of formalized interactions which are restricted to specific positions in a speech situation) has been studied by Schegloff (1968). A speech event (a member of a class of socially-recognized speech activities for which rules of conduct are prescribed by the speech community) has been described by Labov (1968) in his study of 'sounds' in a New York City Negro, nonstandard English dialect. See Hymes (1967) for a discussion of this framework for the study of the 'ethnography of speaking.'

A type of single speaker discourse, the narrative, has also been described as a structural unit which exhibits unique properties of internal organization (Gleason, 1968; Labov & Waletsky, 1967).

[2]The Doer's participation may be, in part, simple, concurrent feedback, e.g., "Yeah," "Okay," verbal signals of his cognitive state and/or of his continued availability for interaction, his being "in play" in the situation in Goffman's term (1963, p. 25). Also, his participation may be more substantive, representing an active search for specific information or presentation of his point of view.

[3]Two examples of spontaneous convergent communication are:

(a) A researcher (Doer) consults with a technician (Knower) in a computer facility. The researcher wishes to isolate a problem (goal) which has arisen in the use of a computer program. The researcher knows his data; the technician knows the requirements or restrictions of the program. They will attempt to isolate the specific problem. The Doer will then correct the control cards, thus executing the solution. (Example taken from a recording of a spontaneous interaction at a computer center.)

(b) A customer (Knower) telephones for the delivery of an order (goal) to an address which is unfamiliar to the salesman (Doer). The Knower is cognizant of the address and its surrounding neighborhood; the Doer knows his position and his cognitive map of the city. Furthermore, both Doer and Knower may have time limitations. The two work out a solution which the salesman (or his agent) executes by delivering the parcel.

[4]Further information on the materials, procedures, and the subject populations is provided in two reports: Garvey and Baldwin (1970) and Baldwin and Garvey (1970). The first report also contains samples of the transcribed protocols and details of the structural analysis of the communications. The second report contains an assessment of performance accuracy, which is also treated in Baldwin and Garvey (1971).

[5]In this and subsequent examples, events are numbered sequentially throughout a communication. Symbols used are [?], question (so marked intonationally, syntactically or lexically); [#], major pause or utterance final intonation, or both; [--], minor pause or unfilled hesitation; [unh], filled hesitation; [/], interrupted utterance; no sentence punctuation is used.

[6]The length and complexity of the orientation stage will depend on the nature of the problem which occasions the conversational interaction, the relationship of the participants and their mutual fund of relevant background information. This stage may be opened with a social routine of greeting or a summons-answer routine, e.g., A - Ron? B - Yeah. A - You describe your part first. B - Okay. The closing stage may contain a review of the solution or summation of results or a reference to the conclusion of the task, e.g., A - We've got the same thing now. B - Yeah, but mine was sitting wrong. A - That doesn't matter. We're finished. B - Okay.

[7]Garvey & Baldwin (1970)

[8]For striking examples of such rule violations bearing on the interpretation of messages, see Garfinkel (1967).

[9]The term communicative competence has been suggested by Hymes (in press) to refer to the (acquired) capability to distinguish socially-defined speech events and acts in speech situations.

REFERENCES

Baldwin, T. L., & Garvey, C. J. Studies in convergent communication: II. A measure of communication accuracy. Baltimore: Report No. 91, Center for Social Organization of Schools, The Johns Hopkins University, 1970.

Baldwin, T. L., & Garvey, C. J. Children's communication skills observed in three problem-solving tasks. Paper presented at the meeting of the American Educational Research Association, New York, February 1971.

Garfinkel, H. Studies in ethnological methodology. Englewood Cliffs, New Jersey: Prentice Hall, 1967.

Garvey, C. J., & Baldwin, T. L. Studies in convergent communication: I. An analysis of verbal interaction. Baltimore: Report No. 88, Center for Social Organization of Schools, The Johns Hopkins University, 1970.

Gleason, H. A., Jr. Contrastive analysis in discourse structure. Monograph Series on Language and Linguistics (Georgetown University), 1968, 19, 39-63.

Goffman, E. Behavior in public places. New York: Free Press, 1963.

Hymes, D. H. Models of the interaction of language and social setting. Journal of Social Issues, 1967, 23(2), 8-28.

Hymes, D. H. Competence and performance in linguistic theory. In R. Huxley & E. Ingram (Eds.), Studies in language acquisition; Methods and modes. London & New York: Academic Press, in press.

Labov, W., Cohen, P., Robins, C., & Lewis, J. A study of the non-standard English of Negro and Puerto Rican speakers in New York City. Volume II: The use of language in the speech community. Final report, Cooperative Research Project No. 3288, U. S. Office of Education, 1968. (ERIC: ED 028 424)

Labov, W., & Waletsky, J. Narrative analysis: Oral versions of personal experience. In J. Helm (Ed.), Essays on the verbal and visual arts. Proceedings of the 1966 annual spring meeting of the American Ethnological Society. Seattle: University of Washington Press, 1967. Pp. 12-44.

McGuire, M. T., & Lorch, S. Natural language conversation modes. The Journal of Nervous and Mental Disease, 1968, 146(3), 239-248.

Schegloff, E. A. Sequencing in conversational openings. American Anthropologist, 1968, 70, 1075-1095.

Table 1

Percentage of Dyads with Representation of Orientation Stage (O) and Closing Stage (C) in Each of Three Tasks

Task	Adult (N=24)	Child[a]
Task I (4 subtasks)	O 92% C 100%	O 77% C 96%
Task II (2 subtasks)	O 92% C 100%	O 64% C 89%
Task III (2 subtasks)	O 79% C 88%	O 55% C 89%

[a]Missing data reduce the child dyads to N=47, N=44 and N=44 for the three tasks, respectively.

Table 2

Mean Percentage of Chunks Ending with Resolution
For Child and Adult Dyads across Three Tasks

	Task I	Task II	Task III
Child Dyads	M = 13.88 SD = 11.38	M = 43.24 SD = 33.00	M = 56.24 SD = 25.25
Adult Dyads	M = 48.29 SD = 17.64	M = 75.12 SD = 22.67	M = 80.12 SD = 14.57
Difference Between Group Means	34.41*	31.88*	23.88*

Note.--The group mean percentages are based on the means for each dyad on each task.

*$p < .001$ by a t-test.